

STATE OF CALIFORNIA
California Energy Commission
Minutes of the March 20, 2013, Energy Commission Business Meeting

The meeting was called to order by Chair Robert Weisenmiller. The Pledge of Allegiance was led by Chair Weisenmiller.

Present:

Robert B. Weisenmiller, Chair
Karen Douglas, Commissioner

J. Andrew McAllister, Commissioner
David Hochschild, Commissioner

1. CONSENT CALENDAR. (Items on the Consent Calendar will be taken up and voted on as a group. A commissioner may request that an item be moved and discussed later in the meeting.)
 - a. MACRO INTERNATIONAL. Possible approval of Amendment 1 to Contract 600-10-011 with Macro International for a nine month no-cost time extension to complete a survey that will collect data on both revealed and stated vehicle preferences of California household and commercial LDV fleet owners, and estimate vehicle choice models for both household and commercial sectors. The Energy Commission vehicle survey is coordinated with a Caltrans travel survey to integrate vehicle and travel survey data for California households. This amendment will also update the terms and conditions. (ERPA funding) Contact: Aniss Bahreinian.
 - b. LOCAL GOVERNMENT COMMISSION. Possible approval of Amendment 3 to Contract 400-10-004 with the Local Government Commission for a three month no-cost time extension for the Evaluation, Measurement and Verification (EM&V) "data warehouse" subtask. (ARRA funding) Contact: Adrian Ownby.
 - c. SAN FRANCISCO MAYOR'S OFFICE OF HOUSING. Possible approval of Amendment 3 to Contract 400-09-019 with the San Francisco Mayor's Office of Housing for a 12 month no-cost time extension for the continued administration of Bay Area Multifamily Fund Program. The program provides financing through a revolving loan fund for energy efficiency and renewable generation retrofits of affordable multifamily housing buildings in the Bay Area. This amendment will ensure that the Energy Commission can still enforce the DOE requirements for the revolving loan fund aspects of the contract through April 30, 2014. (ARRA funding) Contact: Adrian Ownby.
 - d. STANFIELD SYSTEMS, INC. Possible approval of a no-cost time extension (Amendment 2) to the Dynamic Simulation Transportation Energy Model (DynaSim) Software Support and Maintenance Contract 10-409.00-004. The end date will be changed from April 25, 2013, to December 31, 2013. This extension will ensure consistency in technical support services during the 2013 IEPR forecasts. (ERPA funding) Contact: Laura Graber.
 - e. MATHWORKS. Possible approval of Purchase Order 12-445.01-012 for \$21,520 for renewal of five existing MatLab site licenses and the purchase of two additional individual MatLab software license packages. Software is necessary for staff to manage, modify, and fully utilize the recently developed transportation

energy demand forecasting modeling system, DynaSim, which utilizes several MatLab executables as the primary computational core. (ERPA funding)
Contact: Laura Graber.

- f. CITY OF CUPERTINO. Possible approval of the City of Cupertino's locally adopted building energy standards to require greater energy efficiency than the *2008 Building Energy Efficiency Standards*. Contact: Joe Loyer.

Commissioner Douglas moved and Commissioner Hochschild seconded approval of the Consent Calendar. The vote was unanimous. (4-0)

2. ENERGY COMMISSION COMMITTEE APPOINTMENTS. Possible approval of appointments to the Energy Commission's Standing Committees and Siting Case Committees. Contact: Kevin Barker. (5 minutes)

Chair Weisenmiller announced that Commissioner Hochschild will take the lead on Renewables issues.

3. PUBLIC INTEREST ENERGY RESEARCH (PIER) 2012 ANNUAL REPORT. Possible approval of the PIER 2012 Annual Report to the Legislature. Contact: Laurie ten Hope. (15 minutes)

Commissioner Douglas moved and Commissioner Hochschild seconded approval of the report. The vote was unanimous. (4-0)

4. UNIVERSITY ENTERPRISES, INC. (AUXILIARY ORGANIZATION TO CALIFORNIA STATE UNIVERSITY, SACRAMENTO). Possible approval of Amendment 1 to Contract 500-09-039 with University Enterprises, Inc. to add \$1.4 million, extend the contract term by 20 months to March 31, 2015, and include changes to update the terms and conditions. This amendment will also modify the scope of work and budget to update existing tasks and add three projects: Customer Premise Network Design and Testing, Cyber Security Issue Identification, and Simulations of Distributed Generation Impacts on the Distribution System. (PIER electricity funding)
Contact: Consuelo Sichon. (5 minutes)

Commissioner Douglas moved and Commissioner Hochschild seconded approval of Item 4. The vote was unanimous. (4-0)

5. DELTA DIABLO SANITATION DISTRICT. Possible approval of Amendment 1 to Contract 500-10-034 with Delta Diablo Sanitation District to provide a 24 month time extension to March 31, 2015, revise the scope of work to reflect a new technology for converting biosolids to energy, change subcontractors, make budget reallocations, and update the terms and conditions. (PIER electricity funding) Contact: Rizaldo Aldas.

Commissioner McAllister moved and Commissioner Douglas seconded approval of Item 5. The vote was unanimous. (4-0)

6. TRUSTEES OF THE CALIFORNIA STATE UNIVERSITY. Possible approval of the 20 highest ranking grant applications totaling \$1,815,274 from the PIER program's Energy Innovations Small Grant Solicitation 12-01. There are three projects totaling \$276,420 under Transportation Electricity, two projects totaling \$188,177 under Transportation Natural Gas, six projects under Natural Gas totaling \$540,928, and nine projects under electricity totaling \$809,749. (PIER electricity and natural gas funding)
Contact: Raquel E. Kravitz. (10 minutes)

- a. Transportation Electric (12-01TE)

- i) Adromeda Power LLC, Costa Mesa, CA, *INCEPTIVE - Adaptive Electric Vehicle Fast Charging Station*, \$95,000. This project is to determine the feasibility of using a fast charging station with alternative power for electric vehicles and demand response to avoid or reduce peak demand fees.
 - ii) University of California Davis, Davis, CA, *New Portable Electricity Storage Units Using Nanostructured Supercapacitors*, \$86,420. This project is to determine the feasibility of developing a processing method using vacuum filtration to significantly increase its energy storage capacity.
 - iii) Tour Engine, Inc., San Diego, CA, *Tour Engine: High Efficiency Split-Cycle Engine for BEVx Applications*, \$95,000. This project is to determine the feasibility of a new crossover valve that will enable a 20 percent increase in efficiency.
- b. Transportation Natural Gas (12-01TNG)
 - i) SolidMasters, Fullerton, CA, *Crashworthy Subframe CNG Freight and Passenger Locomotive Fuel Tank Enclosure*, \$93,218. This project is to determine the feasibility of using under frame mounted CNG tanks in safety enclosures that meet current Federal Railroad Administrative side impact and derailment crash safety guidelines.
 - ii) C/e Solutions, Inc., West Sacramento, CA, *Biodiesel Production via Poly Functional Reactive Distillation*, \$94,959. This project is to determine the feasibility of simplifying biodiesel production into a single, cost-effective unit.
- c. Natural Gas (12-01G)
 - i) University of California, Berkeley, Berkeley, CA, *Achieving High Efficiency Through Solid State Microwave Assisted Spark Plugs*, \$95,000. This project is to determine the feasibility of using microwave enhanced spark ignition to allow leaner combustion that will result in increased efficiency and reduce harmful emissions.
 - ii) Rhotech Solar, South San Francisco, CA, *Low Cost Glazed Polymer Solar Water Heater*, \$66,300. This project is to determine the feasibility of adding a glazing layer to improve thermal performance by at least 70 percent for heating domestic water.
 - iii) San Diego State University, San Diego, CA, *Electroporation of Algal Biomass to Enhance Methane Gas Production*, \$95,000. This project is to determine the feasibility of using electroporation as a pretreatment method for algal biomass used as a feedstock for anaerobic digesters to increase methane gas yield.
 - iv) University of California San Diego, San Diego, CA, *Improved Energy Efficiency of Natural Gas/Producer Gas Fuel Mixtures*, \$95,000. This project proposes to use commercial software to gather existing data on engine performance and run it through a neural network model looking to reduce carbon emissions.
 - v) Humboldt State University, Humboldt, CA, *Waste Heat Reformation of Renewable Feedstocks to Offset Natural Gas*, \$94,993. This project is to

determine the feasibility of using biomass to convert waste heat energy into chemical energy.

- vi) Olsen, Rolf, Individual, San Diego, CA, *Two-Track Heat Storage: Very Hot Solar Thermal Storage*, \$94,635. This project is to determine the feasibility of adding new fluid flow devices into packed bed heat storage units to make heat storage units that can integrate with utility scale solar thermal power plants at low cost and across a wide range of temperatures, including those too high for state-of-the-art molten salt heat storage.

d. Electrical (12-01E)

- i) NegaWatt Consulting, Inc., San Diego, CA, *HVAC Management System with Dynamic Energy and Demand Optimization*, \$95,000. This project is to determine the feasibility of a cost-effective control system and strategy for buildings with multiple package unit HVAC systems that reduce either peak demand and energy consumption or operating costs by at least 10 percent.
- ii) Torrey Hills Technologies LLC, San Diego, CA, *Enhanced Light Extraction of LEDs Through Ultra-Fast Laser Nano-Fabrication*, \$94,954. This project is to increase the amount of light given off from LEDs and reduce the manufacturing costs by applying more effective material to LEDs.
- iii) Nano Hydrophobics, San Francisco, CA, *Cooling Tower Fouling Prevention through Surface Modification of Fill Media*, \$95,000. This project is to determine the feasibility of improving evaporative cooling tower efficiency by up to 30 percent through the development of nano-scale polymeric coatings.
- iv) University of California, San Diego, San Diego CA, *Static/Dynamic Compilation for QoS and Energy Efficiency in Datacenters*, \$95,000. This project is to design and develop an effective software system to improve data center energy efficiency by improving server utilization.
- v) Bioenno Tech, LLC, Santa Ana, CA, *High Performance Lithium-Ion and SiC-Based Powerpack for Renewable Energy*, \$95,000. This project is to determine the feasibility of designing a powerpack made up of a lithium-ion battery with battery management, and a silicon carbide based inverter to improve energy efficiency and reliability for residential and commercial renewable energy applications.
- vi) Sun Synchrony, Alameda, CA, *Tracking Optimization of Self-Orienting High-Concentrating Photovoltaic Elements*, \$95,000. This project is to determine the feasibility of building a low-cost solar tracker with higher tracking precision.
- vii) InterPhase Solar, Moorepark, CA, *Crystallization of Electrodeposited CIS Thin Films on Flexible Foil*, \$95,000. This project is to develop a pulsed laser annealing tool to crystallize thin films of Cadmium Indium Selenide (CIS) solar cells to increase the efficiency and lower the cost.
- viii) Butler Sun Solutions, Solana Beach, CA, *Optimum Design of SOE for Concentrating Photovoltaics*, \$94,900. This project is to determine the feasibility of a new Secondary Optical Element (SOE) design for use in concentrating photovoltaic systems that will increase the daily-generated

energy by more than five percent and lower the levelized cost of energy by more than four percent.

- ix) EZ Green, Foster City, CA, *Low-Cost Energy Management System for Small Commercial Buildings*, \$49,895. This project is to determine the feasibility of a low-cost energy management system that provides sufficient energy savings to result in a payback period of less than one year for small commercial buildings.

Commissioner McAllister moved and Commissioner Douglas seconded approval of the awards. The vote was unanimous. (4-0)

- 7. BUSTER BIOFUELS, LLC. Possible approval of agreement ARV-12-035 with Buster Biofuels, LLC for a grant of \$2,641,723 to convert a 7,300 square foot industrial warehouse building into a biodiesel facility for fueling company fleet vehicles, and the processing and manufacturing of biodiesel. Buster Biofuels will produce American Society for Testing and Materials (ASTM)-quality biodiesel from waste-based feedstocks, primarily using cooking oil. The benefits of this project will include the reduction of an estimated 32,000 tons of GHG emissions annually. (ARFVTP funding) Contact: Andrew Hom. (5 minutes)

Commissioner Douglas moved and Commissioner Hochschild seconded approval of Item 7. The vote was unanimous. (4-0)

- 8. ZEACHEM INC. Possible approval of agreement ARV-12-034 with ZeaChem Inc. for a grant of \$4,664,657 for both a pilot manufacturing plant to produce lab-scale quantities of a new low-carbon bio-based gasoline blendstock from poplar trees, which are known to have the lowest carbon intensity among trees, and a comprehensive report on a feasibility study for a potential commercial scale biorefinery in Northern California. (ARFVTP funding) Contact: Akasha Kaur Khalsa. (5 minutes)

Item 8 was removed from the agenda.

- 9. MOTIV POWER SYSTEMS, INC. Possible approval of agreement ARV-12-032 with Motiv Power Systems, Inc., for a grant of \$2,379,050 to design and bring up a pilot production line capable of assembling 20 Motiv electric Power Control Systems (ePCS) per month. The ePCS is a collection of five electronic components that, when combined with existing batteries and motors, can be installed in truck/bus chassis, providing a zero-emission rechargeable power train for manufacturers. Matching funds total \$7,137,153. (ARFVTP funding) Contact: Barry McLeod. (5 minutes)

Commissioner Douglas moved and Commissioner McAllister seconded approval of Item 9. The vote was unanimous. (4-0)

- 10. ALTERNATIVE FUEL VEHICLE BUY-DOWN INCENTIVES. Possible approval of a total of \$560,000 in vehicle buy-down incentive reservations. (ARFVTP funding) Contact: Andre Freeman. (5 minutes)
 - a. A-Z BUS SALES, Inc. (OEM – Blue Bird Corporation) (BDIR-12-20) in the amount of \$500,000 for the buy-down of 25 propane school buses of 14,001 pounds gross vehicle weight and greater.
 - b. TRANS WEST TRUCK CENTER (OEM – Ford Motor Company) (BDIR-12-21), in the amount of \$24,000 for the buy-down of four propane vehicles of 8,501 to 14,000 pounds gross vehicle weight.

- c. BIG VALLEY FORD, INC. (OEM –Ford Motor Company) (BDIR-12-22), in the amount of \$36,000 for the buy-down of six propane vehicles of 8,501 to 14,000 pounds gross vehicle weight.

Commissioner McAllister moved and Commissioner Douglas seconded approval of Item 10. The vote was unanimous. (4-0)

11. **Minutes:** Possible approval of the February 28, 2013, Business Meeting Minutes.

Commissioner McAllister moved and Commissioner Douglas seconded approval of the Minutes. The vote was unanimous. (4-0)

12. **Lead Commissioner or Presiding Member Reports.**

Chair Weisenmiller commented that he will be traveling to China with the Governor and thus will not be present at the April 10 Business Meeting.

Chair Weisenmiller also reported on this recent attendance at the American Council on Renewable Energy (ACORE) Transportation and National Defense Forum in San Diego, and the Stanford Institute for Economic Policy Research.

Commissioner Hochschild reported on his recent site visits, including the Salton Sea geothermal plants.

Chief Counsel's Report: None

13. **Executive Director's Report.** Executive Director Rob Oglesby gave the report.

14. **Public Adviser's Report.** None

15. **Public Comment:** None

There being no further business, the meeting was adjourned.

Respectfully submitted,

HARRIET KALLEMEYN
Secretary to the Commission